

JUSTIFICATIONS, STRATEGIES AND CRITICAL SUCCESS FACTORS IN SUCCESSFUL ITIL IMPLEMENTATIONS IN U.S. AND AUSTRALIAN COMPANIES: AN EXPLORATORY STUDY

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Abstract

A growing number of organizations are implementing the ITIL (IT Infrastructure Library) 'best practice' framework in an attempt to improve their IT service management processes. However, not all ITIL implementations are successful and some companies have been disappointed with the outcomes. This exploratory research reports on four case studies of 'successful' implementations of IT service management using the process-based ITIL V2 framework. Two companies are located in the U.S. and two in Australia. The cases demonstrate a mix of implementation justifications and strategies. Critical success factors (CSFs) suggested in the literature are compared against those attributed to these successful ITIL implementations. Some CSFs, including executive management support, interdepartmental communication and collaboration, use of consultants, training and careful software selection are confirmed. Three new CSFs are identified: creating an ITIL-friendly culture, process as a priority, and customer-focused metrics. Practitioner guidelines, to assist IT managers who are contemplating adopting ITIL for process improvement and organisational transformation, are also provided together with some challenges encountered and their associated resolutions.

Keywords: IT Infrastructure Library, ITIL, service management, critical success factors, case studies.

Introduction

Organisations are demanding more from their Information Systems (IS) groups than ever before.

As well as 'better and more disciplined provisioning of IT services to ensure smooth operation'

(Johnson, Hatley, Miller, & Orr, 2007, p. 595), IS is expected to respond with agility in light of

new business opportunities, to demonstrate responsible financial management, and satisfy

external customers through on-line systems as well as internal staff and management. This level

of service can only be achieved with effective communications between IT and lines of business.

IT service management (ITSM) is a strategy by which information systems are offered under

contract to customers and performance is managed as a service. ITSM has grown out of the increasing complexity of IT and the growing maturity of IT management (Conger, Winniford, Erickson-Harris 2008). ITSM provides real benefits by helping IT organizations become more adaptive, flexible, cost effective, and service oriented. ITSM drives fundamental change within the IT organization, including how it manages its processes, technology assets, vendors and deploys personnel, and how IT staff view their organizational roles. According to Galup, Quan, Dattero and Conger (2007), providers of IT services can no longer afford to focus on technology but must consider the quality of services they provide and the relationship with customers. They further note that ITSM is process-focused, sharing common themes with process improvement, project management and IT governance and their supporting frameworks (e.g., Six Sigma, TQM, Business Process Reengineering, CMMI, PMBOK, CobiT) and facilitates interactions of IT technical personnel with business customers and users.

One ITSM framework that is becoming particularly prominent is the Information Technology Infrastructure Library (ITIL). Originally developed for the British Government, ITIL serves as a roadmap for process improvement to help IT professionals build a foundation for ongoing service excellence while meeting budget and regulatory requirements. There are many indicators of the growing awareness of ITIL worldwide (Conger, Winniford and Erickson-Harris 2008; Cater-Steel and Tan 2005; Hochstein, Tamm and Brenner 2005). In the U.S., Forrester Research reports a growing number of client inquiries about ITIL adoption. From July 2007 to July 2008 Forrester's IT infrastructure and operations team fielded nearly 30% more ITIL inquiries than during the same time period the previous year (Hubbert and O'Donnell 2008). And, in a recent global study, Axios Systems (2008) reported that 64% of IT professionals believe following ITIL is key to improving IT reputation. The study also revealed that 87% of the organisations followed

ITIL guidelines with one in three organisations intending to adopt ITIL within a year, and another 36% considering its adoption. Axios Systems also report that although many organisations worldwide are successfully taking up ITSM, not all are experiencing positive outcomes and many of them are confused about how to implement ITIL successfully. This is consistent with findings reported by Cater-Steel and Tan (2005) that only 56% of 108 Australian companies surveyed felt that ITIL implementations had met or exceeded their expectations. Academic research related to the adoption of these frameworks is scarce despite obvious challenges to their adoption and implementation and to date ITSM scientific research in general has focused primarily on definitions and reporting descriptive statistics (Conger, et al. 2008). As highlighted by Hochstein, Zarnekow and Brenner (2005a), research is needed to understand why and how organisations are adopting ITIL and identify the factors that influence successful ITIL transformation projects worldwide.

This exploratory study explores why four public and private organisations in the U.S. and Australia implemented ITIL, what strategies they used and what critical success factors they attribute to a ‘successful’ ITIL implementation. In doing so, the findings contribute to the sparse, but growing body of academic literature on ITSM.

In this paper, the ITIL framework is explained, then previous research on implementation strategies and the critical success factors method is presented and three research questions are posed to guide the study. Next, the case study method is discussed and the methodology used is described. Following that, a cross-case analysis of four organisations – two public, two private, in the U.S. and Australia – addresses each of the research questions. Finally, the critical success factors are compared to previous literature, some ITIL implementation challenges and their associated resolutions are presented and practitioner guidelines are provided.

The Information Technology Infrastructure Library (ITIL) ‘Best Practice’ Framework

ITIL is a set of comprehensive publications providing descriptive guidance on the management of IT *processes, functions, roles* and *responsibilities* related to service delivery and service support. Version 1 of ITIL was originally developed by the Office of Government Commerce (OGC) in the United Kingdom during the 1980s to promote efficient and cost-effective IT operations within government controlled computing centres. Version 1 consisted of 40 volumes describing ‘best practices’ in most areas of IT management. The latest version, ITIL V3 has been distilled into five core volumes: strategy, design, transition, operations and continuous process improvement. Although V3 was released in May 2007, the majority of implementations to date are of ITIL V2 and consequently the focus of this study is ITIL V2. The two primary components of the ITIL V2 framework are *service delivery* and *service support*. Each consists of core processes (shown in Table 1) that IT organisations are advised to put in place in order to provide quality IT services.

Table 1 - Core Components ITILV2 (adapted from OGC, 2006)

Service Delivery – Tactical Level	Service Level Management (SLM)	Negotiates service level agreements (SLA) and ensures these are met. Responsible for ensuring all ITSM processes, operational level agreements and underpinning contracts are appropriate for agreed service level targets.
	Financial Management	Manages an IT service provider’s budgeting, accounting and charging requirements.
	Capacity Management	Ensures that capacity of IT services and IT infrastructure is able to deliver agreed service level targets in a cost effective and timely manner.
	IT Service Continuity Management (ITSCM)	Manages risks that could seriously impact IT services. ITSCM ensures that IT service provider can always provide minimum agreed service level, by reducing the risks to an acceptable level and planning for recovery of IT services.
	Availability Management	Defines, analyses, plans, measures and improves all aspects of availability of IT services. Ensures that all IT infrastructure, processes, tools, roles appropriate for agreed service level targets are available.
Service Support	Service desk function	The single point of contact – service provider and users. Manages incidents, service requests, and handles communication with the users.
	Incident management process	Manages the lifecycle of all incidents (an unplanned interruption to one or more service): restores normal service operations as quickly as possible.

	Problem management process	Manages the lifecycle of all problems (root cause analysis of incident): prevents incidents from happening and minimises the impact of incidents that cannot be prevented.
	Change management process	Controls the lifecycle of all changes: enables beneficial changes to be made with minimum disruption to IT services.
	Release management process	A collection of hardware, software, documentation, processes or other components required to implement approved changes to IT services.
	Configuration management process	Maintains information about configuration items required to deliver an IT service, including their relationships.

To date, the limited academic research on ITIL implementations has focused on reporting outcomes and benefits. In South Africa, Potgieter, Botha and Lew (2005) conducted a case study with a government organisation and identified benefits from implementing ITIL that included customer satisfaction and a direct relationship between improvements in operational performance and increased activities in the ITIL framework. After analysing ITIL implementation in six German firms, Hochstein, Tamm and Brenner (2005) reported benefits from ITIL alignment of improved client/service orientation and the quality of IT services; greater efficiency due to standardization, optimizing of processes and process automation; and transparency and comparability through process documentation and process monitoring. Cater-Steel, Toleman and Tan (2006) replicated Hochstein's research with 12 organisations in Australia, United Kingdom and New Zealand, and found ITIL benefits realised included improved focus on ITSM, more predictable infrastructure, improved consultation with IT groups within the organisation, smoother negotiation of service level agreements and seamless end-to-end service.

Implementation Strategies

In a recent study of *how* organizations implement business processes, Vathanophas (2007) noted that participants differed in their choice of implementation strategies. Some used the 'big bang' approach (i.e., an implementation strategy that cuts over all parts of a system at the same time in a company or division), while others used phased or parallel approaches that bring on board new

systems or processes module by module. The type of implementation strategy employed appears to depend on the situation, company direction and budget. The ‘big bang’ approach was viewed as the most ambitious and difficult for several reasons including resistance to change, nature of existing business processes and the “mindset required to adapt to an entirely new system” (p.439-440). The ‘big bang’ approach seems more appropriate for small companies faced with shorter implementation times or initial setups in new firms. The parallel or phased approach appears to work well for large organisations with existing legacy systems where consultants would have to be engaged for a much longer period of time, and significantly greater costs would be incurred.

Since the ITIL publications do not prescribe *how* to adopt, adapt or implement the guidelines as part of a service management strategy, it would seem useful to explore different implementation strategies organizations are employing in their adoption of ITIL ‘best practices’. Given there are significant differences between the level of ITIL implementation in public and private sector organisations (Cater-Steel and Tan 2005), it might be expected that they have different justifications for implementation and use different implementation strategies.

RQ1: Do public and private sector organisations in the U.S. and Australia have different justifications for implementing the ITIL framework?

RQ2: Are public and private firms in the U.S. and Australia using different strategies to implement ITIL to support IT service management?

In any implementation of a new or improved system or process, there are influencing factors that facilitate or impede its success (Boynton & Zmud, 1984; Rockart, 1979). The concept of the critical success factor (CSF) method is discussed next together with a review of a broad range of uses of the CSF method.

The Critical Success Factors Method

The concept of CSFs was first proposed by D. Ronald Daniel (1961) and refined and popularized by John F. Rockart of MIT's Sloan School of management, nearly 20 years later. According to Rockart (1979), critical success factors (CSFs) are the “few keys areas that must go right for the business to flourish”. If they are not performed well, it is unlikely that the mission, objectives or goals of a business or project will be achieved. A comprehensive, well-grounded list of CSFs, based on the IT implementation, business process reengineering and project management literature and case studies of ERP implementations in U.S. companies, was developed by Somers and Nelson (2001). Their list is presented in Table 2 and comprises a balanced scorecard of CSFs that includes a combination of ‘hard’ components such as specific goals and objectives, and ‘soft’ components such as interdepartmental communication and the ability to work in teams.

Table 2 – Critical Success Factors in ERP Implementations (Somers and Nelson 2001)

Rank	Critical Success Factor	Rank	Critical Success Factor
1	Top management support	12	Dedicated resources
2	Project team competence	13	Use of steering committee
3	Interdepartmental cooperation	14	User training on software
4	Clear goals and objectives	15	Education on new business processes
5	Project management	16	Business process reengineering
6	Interdepartmental communications	17	Minimal customization
7	Management of expectations	18	Architecture choices
8	Project champion	19	Change management
8	Vendor support	20	Partnership with vendor
10	Careful package selection	21	Use of vendors' tools
11	Data analysis and conversion	22	Use of consultants

Despite the strong focus on ERP implementations in the list shown in Table 2, it has been proposed that the majority of these CSFs will be applicable to IT implementations in general

(Akkermans and van Helden 2002). Given that ITSM involves organization-wide IS planning it seems reasonable to expect that some of these CSFs will also be important elements in the successful implementation of an enterprise-wide service and process framework such as ITIL. Preliminary evidence on critical success factors in ITIL implementations can be found in only two studies: Hochstein, Tamm and Brenner's case study of six large German organisations (2005) and a single case study of a large public sector organisation in Australia reported by Tan, Cater-Steel, Toleman and Seaniger (2007). Their findings are summarised in Table 3.

Table 3 - CSFs in ITIL Implementations

Critical Success Factor	Hochstein, Tamm, Brenner (2005)	Tan, Cater-Steel, Toleman, Seaniger (2007)
"Quick wins"	X	
Continuous improvement	X	
Marketing campaigns	X	
Management support	X	X
Training and personnel development	X	X
Virtual project team	X	
Vendor expertise		X
Customer representation on high level committees		X
Implement benefit realisations plan		X
Champion for change		X
Plan and reinforce project objectives		X

Therefore, this led to the third research question:

RQ3: Which critical success factors (CSFs) are associated with implementing ITIL to improve IT service management in public and private sector organisations in the U.S. and Australia?

Based on this review of industry and academic literature, this study was motivated by the need to understand why and how the ITIL framework is being implemented in public and private organisations in the U.S. and compare those with Australian public and private sector ITIL implementations. The objective is also to further explore the influence of critical success factors to help increase the rate of successful ITIL implementations and compare the current findings with the limited evidence already available in Australia and Germany. The methodology used to explore these phenomena is described next.

Research Methodology

The researchers chose the case study methodology to enquire into a contemporary phenomenon in its natural context (Yin, 1994). The case study method provides the opportunity to ask penetrating questions and to capture the richness of organisational behaviour, but it is recognised that the conclusions drawn may be specific to the particular organisations studied and may not be generalisable (Gable, 1994). In the next section, a description is provided of the use of the three phases of the case study method as prescribed by Yin (1994): define and design; select cases and collect data; and analyse and conclude.

Define and Design

A preliminary literature review revealed an interview protocol that had been developed and used in a study of six large German firms undertaken by Hochstein and colleagues (2005; 2005a; 2005b). After permission was gained from Hochstein, the interview protocol was translated from German into English. A copy of the interview protocol is available from the authors.

Select Cases, Collect Data

In view of the need for ‘information rich’ cases, a purposive sample was chosen (Patton, 2002). Four organisations that had ‘successfully’ implemented the ITIL framework were identified and approached. These organisations were deemed to have had successful ITIL implementations in that they reported achieving a more predictable infrastructure from improved rigour during system changes, improved clarity in roles and responsibilities, reduction in system and service outages, improved coordination between functional teams, seamless end-to-end service, more documented and consistent ITSM processes across the organisation, consistent logging of incidents, enhanced productivity, reduced costs, and improved customer satisfaction. As shown in Table 4, two were governmental entities and two were private companies in the financial sector. To gain an international perspective, two were U.S. organisations and two were located in Australia. The authors personally interviewed the project managers, or equivalent, of each of the ITIL implementations. Company websites and publicly available corporate documentation were also reviewed.

Analyse and Conclude

The case studies were analysed through content analysis of the interview transcripts, company websites, and publicly available corporate documentation to identify patterns and summarise the main characteristics of approach and to select quotations that are supportive of the patterns and themes identified. Following Creswell’s (1998) advice, within-case analysis was followed by a cross-case analysis to identify similar themes and patterns across all cases. The four organisations that are the focus of this research are described next.

Profile of Case Organisations

Due to the commercial sensitivity of the information and comments, the actual names of the organisations cannot be disclosed. The four cases are referred to throughout the case discussions as Case A, B, C and D. Table 4 introduces each organisation in terms of its geographic location, industry sector, extent of ITSM support, and initial and subsequent ITIL processes implemented.

Table 4 - Profile of Case Organisations

	Case A	Case B	Case C	Case D
Geographic Location	U.S.	U.S.	Australia	Australia
Public/private sector	Public	Private	Private	Public
Size	Large	Large	Large	Large
Business focus	Local	National	International	Local
Industry sector	State Government	Finance	Finance	Government – University
IT structure	Decentralised	Decentralised	Changed from decentralized to centralised	Federated - multiple IT groups
Number of screens	> 6,000	Not available	3,000	10,000
Commenced ITIL implementation	2005	2005	2000	2004
Initial ITIL process	Incident	Change	Change	Incident
Other ITIL processes underway/implemented	Problem Configuration	Configuration Problem/Incident	Configuration Problem/Incident	Problem Change

Cross-Case Analysis

In describing and comparing the four cases, the salient points from the interviews of the four organisations are detailed and illustrated with quotations from the project/service managers interviewed. The analysis describes the justification and strategies used by each organisation in adopting ITIL and identifies a set of critical success factors that led to their successful implementation of the ITIL framework. Table 5 summarises the justifications, implementation strategies and critical success factors that emerged in each of the four cases and allows for cross-

case comparisons of many aspects related to the ITIL implementation. A detailed cross-case analysis follows.

Table 5 - Cross-Case Comparison of Justifications, Implementation Strategies and CSFs

Dimension	Case A	Case B	Case C	Case D
<i>ITIL Justification</i>				
Trigger	Operational inefficiencies. Lack of communication between functional teams in IT	Inefficiencies in tracking incidents to changes that often failed	IS was providing inconsistent and often failed services	Lack of consistency and formalisation as processes were not formally defined or documented
Prior crisis	Yes	Yes	Yes	No
<i>ITIL Implementation Strategy</i>				
‘Big Bang’	No	Yes	No	Yes
Phased	Yes	No	Yes	No
Clean slate	Yes	No	Yes	No
Outsourcing	No – but possibility exists	N.A.	Partial subsequent to ITIL	Not likely
<i>Critical Success factors</i>				
Senior management commitment	Yes from CIO	Yes – but not initially	Yes from CIO	Yes, but inconsistent
Training	Extensive	Extensive, In-house – 100+ staff	All IT service managers	Extensive, 200 staff
Staff awareness	Yes – all stakeholders	Yes	Yes	High priority
Careful software selection	Used existing service desk tool	Used existing toolset	After processes defined	Used existing toolset
Use of consultants	Embedded – coaches	Process & Tool Implementers	Embedded – process owners	Trainers
Reliance on ITIL publications	Extensive	Extensive	Moderate	Extensive
Culture change	No	No	Yes	Yes
Customer-focused metrics	As prescribed by ITIL	Benchmark against industry data	Availability, change success rate, transaction times, satisfaction	Change from technology-focus to customer –focus

The cross-case analysis compares answers to the three research questions and highlights some important themes that will be valuable to practitioners. In this section, each research question is discussed across the four cases.

RQ1: Do public and private sector organisations in the U.S. and Australia have different justifications for implementing the ITIL framework?

As shown in Table 5, while justifications for ITIL implementations varied somewhat across organisations, the differences did not appear to be related to either public/private status or geographic location. For example, Cases A, B and C reported inefficiencies in services, while Cases C and D were primarily concerned with inconsistent services.

“Typically the use of those systems [help desk and availability monitoring] were under-utilized ... they did not use the full functionality of the tool.” (Service Manager, Case A)

“We have multiple ways of reporting requests for service ... We have tools. We don’t have processes. The various IT departments work in isolation in a silo environment where they are ‘split by domain’.” (Manager, Case B)

“to cope with the fallout of the complexity of changes extra staff were scheduled for Monday mornings ... Something really big would happen and everybody would run around like headless chooks [chickens].” (Project Manager, Case C)

An important theme emerged from Cases A, B and C. Each company had faced a crisis situation that served as the trigger for their ITIL implementation. Case C experienced severe outages as a result of failed system changes; Cases A and B had numerous failed change requests that they could not trace back to incidents. The crisis in frequent system failures provided the stimulus for a radical re-engineering of the ITSM processes. The IT service staff could not change the situation without changing the processes of the applications development and maintenance staff. It required both groups to cooperate to develop and implement an effective change management process. This finding supports earlier research on business process reengineering that has considered whether or not crisis is a necessary stimulus to overcome inertia (Hammer & Champy, 1993; Hill & Collins, 2000).

RQ2: Are public and private firms in the U.S. and Australia using different strategies to implement ITIL to support IT service management?

The second research question considers strategies used to implement ITIL to support ITSM and business transformation. Cross-case analysis revealed two markedly different approaches. In Cases B (U.S., private) and D (Australia, public), ITIL was implemented using a ‘big bang’ approach. In each of these cases, a formal business case was presented and approved. In contrast, Organisations A (U.S., public) and C (Australia, private) viewed the ITIL implementation as business as usual rather than as a project, stating that ITIL was viewed as “*continuous process improvement program*”. This contradicts a basic tenet of IT governance: significant investment projects should not commence without an approved business case setting out all known and foreseeable risks, specification, benefits and costs of the project (Musson & Jordan, 2006). Furthermore, ITIL adoption is a very complex undertaking as it calls for the radical re-engineering of ITSM processes, involving many staff and systems. If it is not properly planned and budgeted then it will fail through lack of resources and will be very difficult to resurrect. Once the initial investment in terms of training, consultants and tools has been made, then it can be continued as continual process improvement. Although Organisation C did not have a project manager, it managed to overcome these risks through very strong and explicit direction from senior management. It is interesting to note that in the case of Organisation C, the implementation involved a radical change in that they created a ‘clean slate’. The external consultants, as process owners, forcibly wiped the slate clean by rolling out ITIL-based processes.

Having defined, documented and implemented the processes, Organisation C was able to outsource infrastructure support and some application support. This finding is consistent with a

reported increasing trend towards selective outsourcing - the decision to source selected IS functions from external providers while still providing between 20 percent and 80 percent of the IS budget internally (Dibbern, Goles, Hirschheim, & Jayatilaka, 2004; Lacity & Hirschheim, 1995). Consequently, many organisations, like Case C have complex contractual arrangements with multiple vendors. Increasingly, external IT Service Providers are also adopting the ITIL framework, providing a common language and facilitating supplier management and seamless end-to-end service to users.

The manager at Organisation A explained their ITIL implementation was a set of “*recurring activities with no start and no end*”. A factor that influenced this approach was previous experience of failed projects and the absence of a project management office (PMO) at Organisation A. Of particular interest is the unexpected finding that two of the large organisations (1 public and 1 private) engaged a ‘big bang’ approach that has typically been associated in the literature with an approach better suited to small firms because of the high degree of risk involved (Vathanophas, 2007). This is in direct contrast to the approach taken by the other two firms where the managers openly insisted that the ITIL implementation “*was not a project*”, but instead was viewed as implementation of continuous process improvement.

A comparison across the two private sectors firms (B and C) and the two public sector organisations (A and D) revealed no differences in implementation strategies, and no differences were observed between the Australian (C and D) and U.S. (A and B) implementations. As far as the sequence of processes implemented, change management was consistently treated as a high priority by all four organisations. This is consistent with the fact that ITIL is not a prescriptive framework and the sequence should be dictated by the specific business strategy and benefits sought and tailored to suit each organisation’s needs.

Regardless of their implementation strategy, all organisations indicated they were looking for ‘*quick wins*’ that they could communicate through newsletters or workshops to maintain the momentum of the ITIL adoption.

RQ3: Which critical success factors (CSFs) are associated with implementing ITIL to improve IT service management in public and private sector organisations in the U.S. and Australia?

The last research question seeks to identify the factors critical to the successful implementation of the ITIL framework. In keeping with empirical findings reported by Somers and Nelson (2001) and others, it is not surprising that *executive support* was unanimously identified as the most important factor, coupled with *ITIL training and staff awareness* to gain buy-in across all stakeholders. Governance issues were also raised related to difficulties in *changing the culture* of the organisation to embrace the ITIL philosophy. The ITIL focus on widespread organisational transformation is reflected in the various *uses of external consultants*, along with the importance of *selecting and utilising the appropriate toolset* at the right time to support, not supplant, the ITIL processes. Akkermans and van Helden (2002) raise the importance of considering the ‘interrelationship between critical success factors’. In this study it became evident that many of the critical success factors were closely related and need to be carefully monitored and managed throughout all phases of implementation. Each of the critical success factors and their interrelationships are discussed next.

Top Management Support

Managers from all four organisations mentioned strong, consistent senior management support is the most important requirement for a successful ITIL implementation. Any organisation considering ITIL implementation would be well advised to link initiative with corporate strategy to secure executive support before proceeding. In Organisation A, the project was under the

direct control of the CIO who had support from the senior executive director of the organisation. And, in Organisation B, while support from top management was not initially secured, it was necessary to gain that support to turn a ‘floundering’ effort into a successful one. As well as being necessary to guarantee funding for resources such as training, hardware and software, senior management support is essential to endorse policy and enforce compliance to the standard processes across the entire organisation. This was particularly evident in Case C: when staff complained about the new change management processes they were told “*you will do it*” and there was no “*chink in the armour*”.

Training and Staff Awareness

Closely related to the need to gain executive management support is the need to create buy-in across all stakeholders in the ITIL initiative. All four organisations invested heavily in ITIL awareness and ITIL Foundation training. As well as promoting ITIL to ITSM staff, other IT staff, managers and users were included in the awareness sessions. The benefits of training and staff awareness were evident at Organisation D where initial resistance was experienced from technical IT staff reluctant to log incidents and document corrective actions. These staff felt logging the calls in the system wasted time and hindered them from providing efficient service. Similar resistance was initially evident at Organisation C where staff felt “*the bureaucracy around the change process closing down ... now it takes three days, not five minutes*”. This kind of thinking was overcome at Organisation A where the use of ITIL publications and training led a manager to note, “*there are certainly challenges but everyone is accepting of the fact that maybe the leading practices provide more knowledge than they can provide either individually or as a group.*” Organisations B and D also relied heavily on the ITIL publications and found

them to be a valuable resource – this worked well with the clean slate method as the ITIL processes could be used to replace existing processes.

Interdepartmental Communication and Collaboration

Training and staff awareness across various departments fosters interdepartmental communication and collaboration. For Organisation A, overcoming the absence of this factor was one of the stated objectives of their ITIL initiative. At Organisation D, interdepartmental communication and collaboration expanded beyond organisational boundaries when a handful of IT service managers from various local organisations who were implementing ITIL began meeting on a regular basis. Known as itSMUG (IT Service Management User Group), the participants meet on a regular basis to provide support and advice to each other by “*swapping war stories*”, and “*don’t pretend things are working when they are not ... very open, honest communication.*”

ITIL-Friendly Culture

Awareness, education and training are essential ingredients for achieving changes in organisational culture. Historically, IT and business personnel have been somewhat isolated from each other and Golden (2007) has proposed that,

“when well-executed, ITIL can shift an IT organization’s culture and focus from the technology to the business strategy ... but culture change is probably the hardest type of change to manage and ITIL’s processes are only as effective as the degree to which your staff adopt them”.

Recognising the need to create a change in culture consistent with the ITIL process framework, external consultants were engaged and placed in senior IT management positions in Organisation C. This sent a very strong message and resulted in the desired “*total turnaround in the culture of the organisation*”.

Process as a Priority

The need to focus on processes *before* selecting and implementing tools was endorsed by all organisations. Consensus was that process *must* be addressed first, then tools selected and implemented to support and integrate processes. In Organisation C, the individual incident, problem, change and configuration management processes were integrated using an automated tool that also facilitated the development of a configuration management database (CMDB) and a known error database. Organisations A and D were looking for a more ITIL-friendly tool to log calls and support configuration management to replace an existing help desk tool that was not ITIL-based and Organisation B related some interesting events that emphasised the need to concentrate on process first. At Organisation A, the project team started to bring in ITSM tools and then “*took a step back*”. The Manager related how the team realised the need to define processes first, “*then we’ll configure a tool to meet those processes. And then, once we got through that, then we went ahead and did training of our end users*”.

Customer-Focused Metrics

There was also a discernable change from technology-focus to customer-centric metrics that needed to be recorded and reported. Organisations C and D both realised they needed to change the type of metrics to report in terms that were meaningful to the customers, rather than on IT technology and application performance. Organisations A and B focused on reporting metrics prescribed in ITIL publications or reported in ITIL benchmark data. For example, organisation A opted to benchmark their metrics against other companies that had also implemented ITIL to establish their KPIs and they are aspiring to collect customer-focused metrics. The project manager believes this fact is particularly important in that,

“The average little league baseball team in the United States collects more statistics than the average IT department and they execute improvement from them much more effectively”.

Organisation D seems to be addressing this omission in that it now focuses on service-based statistics (e.g., application availability) rather than those that are machine-based (e.g. server downtime).

Use of Consultants

External consultants were engaged in each of the four organisations. They played various roles: trainers (Organisation A and D), IT managers (Organisation C), project managers (Organisation D), process owners (Organisation D), tool implementers (Organisation A, B, C and D). If organisations rely heavily on consultants as process owners then care needs to be taken to ensure effective knowledge transfer from the consultants to the permanent staff. In the cases analysed here, there was a concerted effort in each of the organisations to raise the awareness of their employees. Case A even extended the awareness training to all stakeholders and Case C conducted formal IS staff workshops. It is important to factor in the substantial cost associated with the use of consultants. However, for clean slate implementation it is easier if external consultants are directly involved since they do not have ownership issues with the legacy processes. At Organisation C the consultants were *“the hated people”* and were almost seen as *“process Nazis”* when they had to take a heavy-handed approach to ensure that the new processes were followed. Nevertheless, the manager at Organisation C stressed that the external consultants were very experienced in ITIL and were the *“key”* to success in its ITIL implementation. She emphasised *“If we had tried to do it from the grass roots perspective with our existing staff it would have just been too hard.”*

Timing and Careful Selection of an ITSM ‘toolset’

Software tool vendors have responded to the increased popularity of ITIL by developing sophisticated, integrated ITSM tools. These toolsets facilitate the end-to-end and life-cycle view of ITSM by integrating the recording of incidents with the configuration management database, change management, and asset management. There are also automatic discovery tools available such as those used by Organisation A to monitor the performance of network components and assist in diagnosis, reconfiguration and recovery. However, the timing and selection of the toolset to support ITIL implementation can be problematic. Manager A mentioned the organisation had a service desk tool that was underutilised. Manager B stated that the early purchase of the CMDB was a mistake as they did not fully understand and had not developed their processes. In contrast, Organisation C found that implementing the toolset after the processes were defined facilitated the integration of the processes. BPR researchers have considered the role of IT as driver, enabler or prerequisite. This study identifies a fourth role: ITSM tools have the potential to inhibit implementation of new processes.

Managerial Implications

We propose several important considerations in ITIL implementations. Despite the fact that organisations are increasingly reliant on IT and the increasing awareness of the need to become service-oriented and customer-focussed, many IT service providers are struggling to change the culture and processes within their own departments or organisations. Many IT service providers maintain a culture that is technology-focused rather than customer-centric. The mistake of premature purchase of software tools is symptomatic of the culture of focusing on technology as a panacea, instead of considering the required processes first. The first step in any ITIL

implementation, then, should be to create an ITIL-friendly culture by raising awareness in staff through communication and training.

It is clear from our findings that strategies for ITIL implementation can and do vary. The importance of institutional contexts, as highlighted by Chen and Wang (2006) in relation to CRM adoption is relevant to the cases reported here. Specifically, the relative level of institutional support from senior management, historical factors in relation to perceived success of previous performance and projects, industry sector, and the reasons motivating ITIL adoption were different for these four organisations and may have contributed to the contrasting approaches taken. For example, while it might appear to be logical that all organisations should have clear goals and objectives (Somers and Nelson 2001) before starting on a complex undertaking like an ITIL implementation, in one case this did not appear to be necessary: the impetus for the initiative at Organisation B was not defined and originated just “*one layer above the technologist*”, where “*the person in charge of change management, a manager, and a person who was in charge of the data centre, kind of kicked this off and said ‘We really need to do something’*”. In contrast, prior to implementing ITIL, Cases A, C and D had very clear goals and objectives for embarking on their ITIL journey. For example, in Organisation A, the IT department had processes and systems in place that were under-utilised and wanted to “adopt a leading, best-practice framework so they could have a model on which to build off, as opposed to making it up themselves.” As a result, the CIO had a very clear objective of finding a “referenceable” framework that “*he could pull off the shelf and say, ‘Oh, how do I do that incident’ and he could read what to do.*” This finding may indicate that Organisation B is an anomaly and as such warrants further study.

Another cautionary note concerns the roles of the interviewees in this study who were project managers or equivalents of in-house ITSM groups, not external service providers. With the increasing trend towards outsourcing IT service to external service providers, future research should also take into consideration external service provider's experience in implementing ITIL. Table 6 puts these critical success factors in context with previous findings to compare them with those of ITIL implementations in six German organizations (Hochstein, Tamm and Brenner 2005), the single case study of an Australian organization (Tan, Cater-Steel, Toleman and Seaniger 2007) and in the more general IT context (Somers and Nelson, 2001).

Table 6 - Comparison with Previous CSF Studies

	Critical Success Factors	Current Study	Somers, Nelson (2001)	Hochstein, Tamm, Brenner (2005)	Tan, Cater-Steel, Toleman, Seaniger (2007)
Previously Reported	Top management support	X	X	X	X
	Training/personnel development	X	X	X	X
	Virtual project team	X		X	
	Careful software selection	X	X		X
	Use of consultants	X	X		
	Interdepartmental communication and collaboration	X	X		
NEW	<i>Process priority</i>	X			
	<i>ITIL-friendly culture</i>	X			
	<i>Customer-focused metrics</i>	X			

This comparison highlights three new critical success factors not previously reported. These are *process priority*, *ITIL-friendly culture* and *customer-focused metrics*. These align well with the core ITIL philosophy: the need to extend IT thinking beyond the technology to include people and process. The three new critical success factors identified in this study also emphasise the

broad reach of ITSM beyond the concerns of IT infrastructure to viewing IT as a service organisation that supports end-to-end business operations.

Challenges in ITIL Implementations

Absent from the academic literature is a discussion of specific challenges encountered in ITIL implementations. In analysing the four case studies reported here, it is worthy of note that a number of challenges were raised and the resolution of these issues will be of particular interest to practitioners, as discussed next.

Dual Roles – while the acceptance and use of the ITIL framework appears to give clarity to roles and responsibilities of staff members, some employees at Organisation A found it challenging to “*wear two hats and do two roles*” while initially conforming to the ITIL processes in their everyday work. To overcome this, overlaps in work had to be reduced and better coordination between functional teams achieved throughout, resulting in continual improvement.

Engaging the Right People - in Organisation B, the manager noted they encountered some challenges in making the much-needed changes to the corporate culture, “*the biggest thing we had to do is get everybody onboard, and I’m not sure we’re completely there, but we’re making great progress ... in a large organization it just takes a long time to get to the right people.*”

Gaining Support from Technical Staff – One of the challenges faced at Organisation D was gaining support of their technical staff. Some resistance to adhering to the new documentation and communication process was experienced. This situation was resolved by providing constant feedback to the technical staff from the ITIL process champions and by maintaining a light-hearted approach in presentations and workshops. A related challenge involved changing the focus from ‘crisis management’ and ‘workarounds’ to consideration of the real problems as defined by ITIL, and resolving the important underlying causes of incidents.

Measuring ROI – the manager at Organisation D also noted difficulties in measuring return on investment from their ITIL implementation. Although costs can be quantified, he feels that it is very difficult to actually measure real benefits. They are still grappling with this challenge and as yet have not resolved it.

Limitations and Conclusions

While the findings reported here must be considered with caution, due to the small number of cases evaluated, the case studies presented demonstrate that implementing ITIL can transform ITSM and provide benefits to organisations in the U.S. and Australia. As stated earlier, in these organisations, the benefits include a more predictable infrastructure from improved rigour during system changes, clarity to roles and responsibilities, reduction in system and service outages, improved coordination between functional teams, seamless end-to-end service, documented and consistent ITSM processes across the organisation, consistent logging of incidents, enhanced productivity, reduced costs, and improved customer satisfaction. Although there is no set recipe for the correct sequence to implement the ITIL processes, an effective strategy that emerged was to *initially look for quick wins*. As in most initiatives involving organisational change and technology, the key is *effective engagement of personnel affected* coupled with *support from senior management* and communication of results, early and often. Senior management does not need an in-depth understanding of ITIL but must provide support in terms of resources and authority to enforce new policies. Effective use of one-on-one communication with key stakeholders, backed up with newsletters and workshops helps to promote ITIL to the wider group of stakeholders and establish interdepartmental communication and collaboration. BPR and TQM principles can be usefully applied to achieve effective ITIL implementation along with a cultural change for IT staff, users and customers to achieve business service excellence to an

ITIL-friendly culture. Another important theme that emerged is that ITIL implementations do not always need a business case, nor do they have to be structured as ‘projects’. However, regardless of the way in which the implementation is ‘sold’ within the organisation, it is clear that principles of good project management must be adhered to. The right people must be assigned into the right roles, responsibilities must be clearly spelled out, schedules maintained, monitored and controlled, and results measured and reported with a strong customer focus.

In conclusion, it can be seen that this study makes four significant contributions. First, the case studies of the adoption of ITIL by four large organisations provides useful information for IS managers in terms of the impact, challenges and benefits to expect. Second, it is the first study to compare across countries i.e., Australian and U.S. organisations, with both public and private sector cases, undertaking process improvement in the service management area. Third, this study has contributed to the research literature on ITSM by supplementing the findings from the existing ITIL case studies (Hochstein, Tamm et al., 2005) and previous CSF research (Somers and Nelson 2001, Akkermans and van Helden 2002). Finally, we identified and discussed new critical success factors that appear to be specific to ITIL implementations and recommend guidelines for managers planning an ITIL journey.

By detailing and comparing the ITIL journey of four large organisations, this research helps bridge the gap between practitioner and academic research and provides valuable insights to both communities.

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